

**Neurobiology (ZOOL 4384)**  
(CRN #18946)  
Course Syllabus, Fall 2021  
TR: 9:00-10:20 pm  
Quinn Hall 212

Manuel Miranda, Ph. D.

Office: Biosciences Building 2.166

e-mail: [mmiranda3@utep.edu](mailto:mmiranda3@utep.edu)

Office Hours: Open door policy

**TEXTBOOK (required)** – *Neuroscience*, Fourth, Fifth or Sixth Edition,  
Editors: Purves, D; Augustine, G.J; Fitzpatrick, D; Hall, W.C; LaMantia, A.S; Mcnamara, J.O; White, L.E.  
Publisher: Sinauer Associates, Inc. [www.sinauer.com](http://www.sinauer.com)

**Class time: This is an in-person class and all the sessions are at the scheduled time and location. No recordings will be available unless requested by the student due to COVID emergencies. Your book has an access code to quizzes and flashcards, use it; it is free of charge for you. I will also provide some links to YouTube videos on the reviewed materials.**

(Suggested)– *Biological Psychology*, Sixth Edition  
Editors: Breedlove, M; Watson, N.V; Rosenzweig, M.R.  
Publisher: Sinauer Associates, Inc. [www.sinauer.com](http://www.sinauer.com)

First day of classes	Tuesday, August 24th
Census Day:	Sept 8 <sup>th</sup>
Course Drop Deadline:	Oct 29th
Last day of classes	Dec 2nd
Final Exam:	Tuesday, Dec 7th, 10 am

All grades of Incomplete must be accompanied by an Incomplete Contract that has been signed by the instructor of record, student, departmental chair, and the dean. Although UTEP will allow a maximum of one year to complete this contract, the College of Science requests it be limited to month based upon completion data. A grade of Incomplete is only used in extraordinary circumstances confined to a limited event such as a missed exam, project, or lab. If the student has missed a significant amount of work (e.g. multiple assignments or tasks), a grade of Incomplete is not appropriate or warranted.

### **CLASS RECORDINGS**

The use of recordings will enable you to have access to class lectures, group discussions, and so on in the event you miss a synchronous or in-person class meeting due to illness or other extenuating circumstance. Our use of such technology is governed by the Federal Educational Rights and Privacy Act (FERPA) and UTEP's acceptable-use policy. A recording of class sessions will be kept and stored by UTEP, in accordance with FERPA and UTEP policies. Your instructor will not share the recordings of your class activities outside of course participants, which include your fellow students, teaching assistants, or graduate assistants, and any guest faculty or community-based learning partners with whom we may engage during a class session. **You may not share recordings outside of this course.** Doing so may result in disciplinary action.

## COVID

Please stay home if you have been diagnosed with COVID-19 or are experiencing COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, so that we can work on appropriate accommodations. If you have tested positive for COVID-19, you are encouraged to report your results to [covidaction@utep.edu](mailto:covidaction@utep.edu), so that the Dean of Students Office can provide you with support and help with communication with your professors. The Student Health Center is equipped to provide COVID 19 testing.

The Center for Disease Control and Prevention recommends that people in areas of substantial or high COVID-19 transmission wear face masks when indoors in groups of people. The best way that Miners can take care of Miners is to get the vaccine. If you still need the vaccine, it is widely available in the El Paso area, and will be available at no charge on campus during the first week of classes. For more information about the current rates, testing, and vaccinations, please visit [epstrong.org](http://epstrong.org)

### **Center for accommodation and support services:**

If you have a disability and need classroom accommodations, please contact: The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to [cass@utep.edu](mailto:cass@utep.edu), or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at [www.sa.utep.edu/cass](http://www.sa.utep.edu/cass).

### **OBJECTIVES:**

Upon completion of this class, students should be able to:

- Understand the basic architecture of the Central and Peripheral Nervous System
- Understand the electrical properties of Neurons and propagation of signals in the Nervous System
- Analyze the components and function of the different neuronal circuits.
- Understand the mechanism of action of several pharmacological agents and their targets

### **EXAMINATION PROCEDURE**

- There will be three exams during the semester.
- You must take all three exams. If you missed exams without a university accepted excuse, you may be withdrawn from the course.
- There will be a comprehensive Final Examination of all the chapters that we have covered in the class during the semester. Exam will be multiple choices. Bring your own green scantron sheet, number 2 pencils, and a very good eraser with you to the exams.
- In addition to the above, there will be several in-class assignments
- Attendance is optional; however, those that attend constantly are entitled to extra-credits

### **GRADING POLICY**

A = 90-100  
B = 80-89  
C = 70-79  
D = 60-69  
F = Below 60

### **GRADE DISTRIBUTION**

Exams (3)	60%
Final Exam	25%
Quizzes	15

LECTURE	DATE	TOPIC	Required Reading
1 -2	Aug 24, 26	Introduction: Studying the Nervous System	Chapter 1
3 – 4	Aug 31,Sept 2	Electrical Signals of Nerve Cells	Chapter 2
5-6	Sept 7, 9	Voltage Dependent Membrane Permeability	Chapter 3
7-8	Sept 14,16	Channels and Transporters	Chapter 4
	<b>Sept 23</b>	<b>EXAM-1</b> <b>Chapters 1-4</b>	
9	Sept 21	Synaptic Transmission	Chapter 5
10-12	Sept 28, 30	Neurotransmitter and their Receptors	Chapter 6
13-14	Oct 5,7	Molecular Signaling within Neurons	Chapter 7
15 – 17	Oct 12,14,19	Synaptic Plasticity	Chapter 8
18 – 19	Oct 21, 26	The Sensory System: Touch and Proprioception	Chapter 9
	Nov 2	<b>EXAM-2</b> <b>Chapters 5-8</b>	
20 – 21	Oct 28, Nov 4,9, 11	Pain	Chapter 10
22	Nov 16,18, 23	Vision: The Eye	Chapter 11
23-26	Nov 25	Thanksgiving-No class	
	<b>Nov 30</b>	Review	
	<b>Dec 2</b>	<b>EXAM-3</b> <b>Chapters 9-11</b>	
	Dec 7th	<b>FINAL EXAM</b>	10:00 – 12:45 pm